corrections. Figures 9a-c have been labeled "Related Art".

Claims 1, 3, 9 and 11 were rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Kitahiro (JP 02158156 translation). The Examiner considers the inkjet head described in the AAPA combined with the chip reinforcement shown in Kitahiro to show all of the invention's characteristics.

The Applicants respectfully transverse this rejection on the grounds that the two references are not properly combinable and on the grounds that if combined, one of ordinary skill would not be provided with knowledge of the claimed invention absent from an impermissible hindsight reconstruction.

The AAPA deals with prior art inkjet recording heads. As will be appreciated by the Examiner, these prior devices do not include a metal backing on the head.

Kitahiro describes a reinforcement scheme for a thin and continuous wafer of semiconducting material placed inside of a plastic card. The addition of a reinforcement layer in Kitahiro addresses the risks involved in the manufacture and real world use of a very thin and fragile slice of material, particularly when the chip is inserted into the flexible plastic carrier card. With respect to the top paragraph of page 5 of the English language translation of Kitahiro, it can be seen that the reinforcing layer can be ceramic (alumina or sapphire) or metal (by metal platting).

The present invention employs a metal film to reinforce an already brittle material with holes and ink pathways. Claim 1 requires "a metal film at least on part of at least one side of said head body" (emphasis added), and requires "a plurality of orifices" and "a plurality of individual ink flow paths." These pathways run throughout the recording head, introducing features that may lead to breakage in the manufacture of the heads separate and apart from the thinness of the said head. The addition of holes in the main material of the head forces the present invention to deal with different stresses than would be encountered with a continuous chip such as shown in Kitahiro.

Furthermore, one of ordinary skill in the art would not be provided with any guidance on which material to select for combining with the AAPA based on

Kitahiro. As noted above, Kitahiro suggested using either ceramics or metals as reinforcements. Further, Kitahiro suggests using metals only "if necessary." Thus one of ordinary skill in the art would be more likely to select a ceramic as a reinforcement to the AAPA structure based on Kitahiro.

Since the present invention possesses holes in the recording head, the metal film that is used to reinforce the head must also have holes to allow the passage of ink through the device. Kitahiro deals with continuous semi-conductor devices and does not have any bearing upon a non-continuous recording head that raises different and distinct issues.

New claim 13 has been added. Similar to claims 3 and 11, claim 13 requires that the plurality of orifices are formed on one side of the head body, and that an ink supply bore hole is bored on a side opposite to an orifice forming surface of the head body. In addition, claim 13 requires that the metal film is provided at a specific location, i.e., it surrounds the inlet of the ink supply bore hole. This is shown in Figure 2A. The Kitahiro reference in combination with the AAPA would not make obvious the specific location and configuration required by claim 13 where the metal film is around an inlet of the ink supply bore hole.

Claims 2, 4, 10 and 12 were rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Kitahiro (JP 02158156 translation) and further in view of Gaynes et al. (US 6,197,619). The Examiner considers the inkjet head described in the AAPA, as modified, teaches the present invention, except for the metal film being made of nickel and being 0.1 microns to 0.9 microns thick. The Examiner also considers Gaynes to describe a metal reinforcement layer that may be composed of nickel and be 0.1 microns to 4 microns thick.

The Applicants respectfully transverse this rejection. As described above, Kitahiro uses a continuous reinforcement layer to reinforce a thin silicon wafer. The inclusion of holes in a inkjet head introduces new problems as far as the reinforcement of the said head. Gaynes also deals with the issue of a continuous semiconductor reinforcement. Moreover, while Gaynes does use a reinforcement layer that may be nickel in the construction of his device, but the reinforcement layer is attached to the wafer by means of a layer of adhesive. In Gaynes, the

design of the reinforcement layer is focused on the stresses that a continuous wafer of silicon may encounter during thermal cycling. Since the substrate that a wafer is attached to may have different rate of thermal expansion than the wafer, the surfaces of the wafer experience mismatched stresses throughout its lifetime. This is addressed by the reinforcement layer's position on the side of the wafer that is not bonded to the substrate. If the rate of thermal expansion for the reinforcement layer and the substrate are roughly equal, the stresses on every surface of the wafer are roughly equal, reducing the occurrence of surface cracks due to thermal cycling.

This thermal cycling is not present in the current invention. Even in the use of thermal methods for inkjet printing, no great thermal stress is applied to the print head. Also the position of the metal layer in not one that will accomplish a matching of the rate of thermal expansions along all sides of the wafer. In fact, in the present invention the metal layer is sandwiched in the middle of the recording head.

Furthermore, the Admitted Prior Art and Kitahiro et al. and Gaynes et al. cannot be properly combined. As discussed in detail above, the Admitted Prior Art and Kitahiro cannot be properly combined. Thus, the addition of Gaynes would likewise not be possible and would not yield the claimed invention.

In view of the above, reconsideration and withdrawal of the anticipation rejections based on AAPA, Kitahiro and Gaynes are respectfully requested.

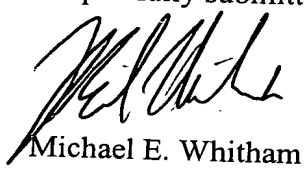
In view of the foregoing, it is respectfully requested that the application be reconsidered, that claims 1-4 and 9-13 be allowed, and that the application be passed to issue.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

A provisional petition is hereby made for any extension of time necessary for the continued pendency during the life of this application. Please charge any fees for such provisional petition and any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 50-2041 (Whitham,

Curtis & Christofferson).

Respectfully submitted,



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